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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/617,156	07/10/2003	James L. Piller	31433-001	2720

7590 03/01/2004
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EXAMINER

THOMAS, ERIC W

ART UNIT PAPER NUMBER

2831

DATE MAILED: 03/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/617,156

Applicant(s)

PILLER ET AL.

Examiner

Eric W Thomas

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7/10/03
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

The election of invention II in the response filed 12/22/03 is noted. The examiner withdraws this requirement because the product and process claims can be rejected using the same piece (s) of prior art. Claims 1-21 are pending in the instant application.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-10, 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Hamada et al. (US 6,580,601).

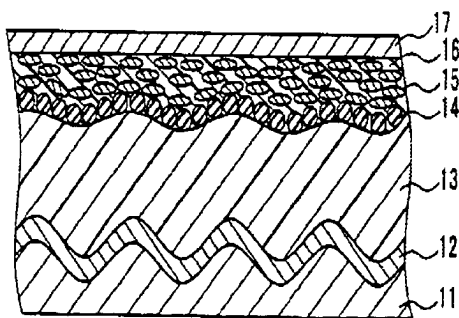


FIG. 1B

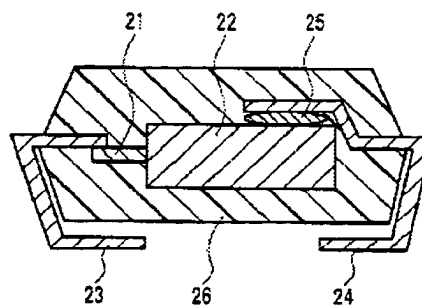


FIG. 2

Hamada et al. disclose in fig. 1B, & 2, 1, a solid electrolytic capacitor comprising:

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a) a valve metal (11 – col. 4 line 3) operably attached to a metal lead (23); b) a dielectric (12) formed on the surface of said valve metal; c) a first conductive polymer (13 – col. 4 lines 11-12) formed on the surface of said dielectric; d) a conductive carbon layer (14) coated onto said conductive polymer; e) a second conductive polymer (16) formed on and infused into said conductive carbon layer; (f) a conductive metal (17 – col. 14 lines 32-33) coated onto said second conductive polymer; g) a conductive lead frame (24) attached to said conductive metal (silver); and h) an encapsulating polymeric insulating coating (26) exposing only said metal lead and said conductive lead frame. It should be noted that Hamada et al. do not expressly state that the conductive metal is painted on the second conductive layer. Painting the conductive layer onto the second conductive layer is a method of forming the device. The method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight. In re STEPHENS, WENZL, AND BROWNE, 145 USPQ 656 (CCPA 1965)

Regarding claim 2, Hamada et al. disclose said valve metal is tantalum (see col. 4 line 3)

Regarding claim 3, Hamada et al. disclose said valve metal is a sintered tantalum (see col. 4 line 3).

Regarding claim 4, Hamada et al. disclose the dielectric formed on the surface of the valve metal is the oxide of the valve metal (see col. 4 line 7-9).

Regarding claim 5, Hamada et al. disclose at least one of said first and second conductive polymers is an intrinsically conductive polymer (col. 4 lines 11-12).

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Regarding claim 6, Hamada et al. disclose both of said first and second conductive polymers are an intrinsically conductive polymer (col. 4 line 11-12 & col. 6 line 59-65).

Regarding claim 7, Hamada et al. suggest that the first and second intrinsically conductive polymers are the same (col. 4 line 11-12 & col. 6 line 59-65).

Regarding claim 8, Hamada et al. suggest that said first and second intrinsically conductive polymers are different (col. 4 line 11-12 & col. 6 line 59-65).

Regarding claim 9, Hamada et al. disclose said intrinsically conductive polymer is a polythiophene (col. 4 line 11-12 & col. 6 line 59-65).

Regarding claim 10, Hamada et al. disclose said intrinsically conductive polymer is a polythiophene (col. 4 line 11-12 & col. 6 line 59-65).

Regarding claim 13, Hamada et al. disclose the conductive metal layer is formed from silver. It should be noted that Hamada et al. do not expressly state that the conductive metal is painted on the second conductive layer. Painting the conductive layer onto the second conductive layer is a method of forming the device. The method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight. In re STEPHENS, WENZL, AND BROWNE, 145 USPQ 656 (CCPA 1965).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hamada et al. (US 6,580,601) in view of Sakai et al. (US 6,430,032).

Hamada et al. disclose the second polymer comprises a poly (3,4-ethylenedioxythiophene) (as seen in example 2). Hamada et al. disclose the claimed invention except for the first conductive polymer comprises a poly (3,4-ethylenedioxythiophene). It should be noted that Hamada et al. is not limited to the first polymer layer. Hamada et al. disclose the first polymer layer is formed from a polythiophene material. Sakai et al. teach that it is common in the solid electrolytic capacitor art to form the first polymer layer (i.e. solid electrolyte) from a poly (3,4-ethylenedioxythiophene). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the capacitor of Hamada et al. using a poly (3,4-ethylenedioxythiophene) material, since it has been held to be within the general

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skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

4. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hamada et al. (US 6,580,601) in view of Anano et al. (US 5,586,001).

Hamada et al. disclose the claimed invention except for the encapsulating resin is formed from an epoxide resin.

Anano et al. teach the use of an encapsulating resin formed from an epoxide (epoxy) resin (see example 10).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the encapsulating resin from an epoxide resin material, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

5. Claims 12,15-17, and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamada et al. (US 6,580,601) in view of Reed et al. (US 6,304,427).

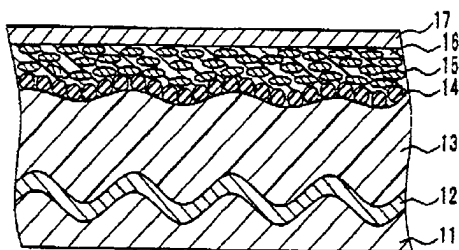


FIG. 1B

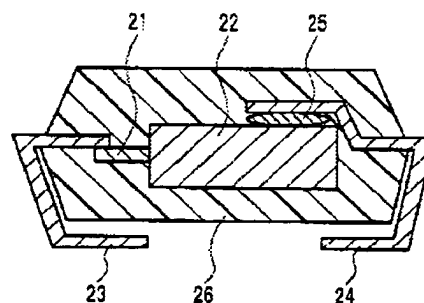


FIG. 2

Regarding claim 12, Hamada et al. disclose the claimed invention except for the carbon layer is formed from a highly graphitized carbon.

Reed et al. teach the use of a carbon layer formed from a highly graphitized carbon material. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to form the carbon layer of Hamada et al., using the highly graphitized carbon of Reed et al, since such a modification would provide the carbon layer of Hamada et al. with a layer of carbon having a high bulk conductivity.

Regarding claim 15, Hamada et al. disclose a method of forming a solid electrolytic capacitor wherein the method comprises: a) forming a valve metal pellet by pressing and sintering a powder of a valve metal (see col. 4 lines 3-10), b) attaching a conductive lead to the pellet (col. 4 lines 3-10), c) anodizing the valve metal pellet to form a dielectric oxide on the surface of the valve metal (see col. 4 lines 8-10), d) forming a first conductive polymer on the surface of the dielectric oxide by polymerization of a monomer thereof (Although the specific examples do not disclose the first conductive polymer (i.e. the dielectric) is formed by a polymerization of a monomer thereof; Hamada et al. suggests in the working examples that the conductive polymer layer can be formed from the polymerization of a monomer) e) a carbon material is formed on the first conductive polymer, f) a second conductive polymer is infused into and on the carbon material wherein the second conductive polymer is formed by polymerization of a monomer thereof (see working example 2), g) a metal layer is formed on the second polymer layer, h) the metal layer is attached to lead frame (24), i) encapsulating the painted pellet in a dielectric polymeric coating.

Hamada et al. do not disclose dipping the polymer-coated pellet into a suspension of carbon and drying to produce a carbon coated pellet; dipping the polymer coated pellet into a paint containing a conductive metal powder.

Reed et al. teach a method of forming a carbon material on a coated pellet. The pellet is dipped into a suspension of carbon (col. 6 lines 25-35) and the carbon layer is dried to produce a carbon-coated pellet. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to form the carbon layer of Hamada et al. using the carbon dipping technique as taught by Reed et al., since such a modification would provide a method of forming the carbon layer wherein the carbon layer is formed with enhanced bulk conductive wherein the carbon layer is in intimate contact with the polymer layer.

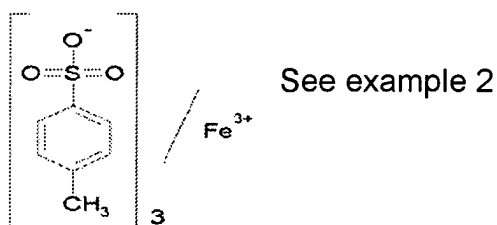
Reed et al. teach a method of forming a conductive metal layer wherein the capacitive element is dipped into a paint comprising a conductive material (see 7 lines 40-65). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the capacitor of Hamada et al. by applying a paint layer to the second polymer as taught by Reed et al., since such a modification would provide a silver layer offers a low resistance connection to the second polymer layer and provides an approximately equipotential surface that effectively captures electrical displacement current generated with the capacitor so that they can be guided to the negative terminal with a minimum of unnecessary electrical resistance.

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Regarding claim 16, Hamada et al. suggests in col. 6 lines 51-65, & example 10) the first and second conductive polymers are formed by chemical oxidation of monomers.

Regarding claim 17, Hamada et al. suggests the monomers are thiophenes (see example 10 & col. 4 line 12).

Regarding claim 19, Hamada et al. disclose the oxidant is iron tosylate.



Regarding claim 20, Reed et al. teach the claimed invention except for the step of forming a second conductive polymer is repeated. It is well known in the capacitor art to repeat a polymerization step. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to repeat the step of forming the second conductive polymer, since such a modification would ensure the filling of the numerous pores.

Regarding claim 21, Reed et al. teach that the paint containing a conductive metal powder is a silver paint.

6. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hamada et al. (US 6,580,601) and Reed et al. (US 6,304,427) as applied to claim 17 above, and further in view of Sakai et al. (US 6,430,032).

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Hamada et al. disclose the second polymer comprises a poly (3,4-ethylenedioxythiophe) (as seen in example 2). Hamada et al. disclose the claimed invention except for the first conductive polymer comprises a poly (3,4-ethylenedioxythiophe). It should be noted that Hamada et al. is not limited to the first polymer layer. Hamada et al. disclose the first polymer layer is formed from a polythiophene material. Sakai et al. teach that it is common in the solid electrolytic capacitor art to form the first polymer layer (i.e. solid electrolyte) from a poly (3,4-ethylenedioxythiophe). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the capacitor of Hamada et al. using a poly (3,4-ethylenedioxythiophe) material, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Conclusion

In order to ensure full consideration of any amendments, affidavits, or declaration, or other documents as evidence of patentability, such documents must be submitted in response to this Office action. Submissions after the next Office action, which is intended to be a final action, will be governed by the requirements of 37 CFR 1.116 which will be strictly enforced.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

6,515,848 – disclose a solid electrolytic capacitor comprising the step of chemical oxidation.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric W Thomas whose telephone number is (703) 305-0878. The examiner can normally be reached on Mon & Sat 9:00AM - 9:30PM; Tues-Fri 5:30PM-10:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on 703-308-3682. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9318.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

ewt

A handwritten signature in black ink, appearing to read "Anthony Dinkins". The signature is fluid and cursive, with a large loop at the end.

ANTHONY DINKINS
PRIMARY EXAMINER